

# Future Needs

**A** number of future initiatives related to implementing ecosystem and landscape-scale management in Wisconsin may be needed and are suggested below. Although not all-inclusive, these issues were identified by the Ecosystem Management Planning Team as having major roles in the future of ecosystem and landscape-scale management in the state. Efforts to address some of these issues are already ongoing by the Wisconsin DNR and/or its various partners, but some are still in the very early stages.

## Strategic Conservation and Landscape Planning

- Landscape-scale plans are needed that include explicit habitat and population or community goals, where appropriate, along with qualitative goals such as habitat quality, configuration, context, and management feasibility for each ecological landscape. These plans could identify what ecological resources might best be managed from a statewide and regional perspective. Land ownership patterns could be used to identify opportunities for landowners to contribute to the larger goals of the landscape while meeting their own objectives. Key ecosystem components that do not currently occur on public lands and/or where success will require public/private partnerships could be included. Nature-based recreational and socioeconomic activities could also be incorporated in these plans. Coordination and cooperation among different program jurisdictions, managers, and interest groups will be needed to develop common goals for the landscape.
- Landscape-scale plans could be used as “umbrella plans” within which more specific plans such as DNR master plans might be coordinated and integrated to accomplish regional or statewide goals. These plans should minimize or prevent conflicting or incompatible management in the same areas or between adjoining properties.
- Planning and managing for functional natural community mosaics has clear advantages and will provide the most resiliency to change and preserve the most management options. Management for a single species to provide recreation or economic return could still be accomplished effectively but would encompass other larger-scale objectives.

- Ongoing assessment of the major stressors to Wisconsin’s ecosystems is needed, including the growing human population, ongoing development, climate change, and the spread of invasive species. Use of an ecosystem and landscape-scale perspective to strategize where to focus limited resources is desirable.
- Coordination of landscape-scale planning efforts with the DNR’s master planning process will be one of the best ways to integrate management. Recent DNR efforts, including the “eco-summits” coordinated by the Bureau of Wildlife Management, have begun the discussion of how to make the best use of DNR resources while addressing the needs outlined in the Wildlife Action Plan, this handbook, and other efforts. This type of work is needed and should continue and be coordinated across programs and include external partners. Using this information to inform DNR master planning efforts would be a critical step in implementing ecosystem and landscape-scale management on state lands.

## Implementation of Ecosystem and Landscape-scale Management

- An “ecosystem services” approach is needed to clarify benefits derived from Wisconsin’s ecosystems. This information could be used to assess major impacts from population growth, development, land-use changes, climate change, and invasive species and could be useful in conservation and planning efforts.
- Use of adaptive resource management is desirable and could be a formal part of managing natural resources wherever possible. This will, necessarily, include monitoring as well as a structured management approach (e.g., using an experimental design to implement management activities) for evaluating successes and identifying opportunities for improvement.
- A structured decision-making process and active adaptive resource management models are needed and could be used when designing and evaluating ecosystem and landscape-scale projects.
- Landscape-scale explicit performance measures are desirable and could be developed to ensure progress is being made to address regional and statewide ecological goals.

- Research and demonstration areas could be developed to test and promote ecosystem and landscape-scale management in collaboration with partners and private-land-owners.
- Baseline biological data are currently lacking for the majority of the state. Biotic inventories should be continued and expanded as needed, focusing on plants, animals, and natural communities to inform DNR master planning on state lands and to provide baseline biological data on other lands (public and private).
- Monitoring is needed throughout the state to inform ecosystem management and planning activities. Several monitoring programs are in place now, but there is a particular need to directly monitor the impacts of management activities on Wisconsin ecosystems. Various types of monitoring could be implemented involving different intensities and scales. Even low-cost, low-technology methods such as “**photopoints**” can fulfill an important need.
- Additional inventory data are needed that could be collected and archived to be more useful as a baseline in the context of ecosystem and landscape-scale management.
- When possible, integration of the handbook with other broad-scale efforts related to ecosystem and landscape-scale management will be needed, as was done with Wisconsin’s Wildlife Action Plan, the Wisconsin All-Bird Conservation Plan, the Wisconsin Land Legacy Report, and others.
- Many Wisconsin DNR natural resource managers, biologists, and others are expected to retire in the coming years. Ways to capture important institutional knowledge are needed to continue monitoring efforts conducted by these staff.
- Web pages associated with the handbook will need to be maintained and updated, looking for new ways to integrate them with other tools such as the Wildlife Action Plan. New tools could be developed to assist users in implementing ecosystem and landscape-scale management.
- Good communication will need to be maintained between the Ecosystem Management Planning Team, DNR planners, and managers. Feedback from these groups should be used to focus future efforts and make improvements.
- The handbook’s coverage of aquatic ecosystems could be expanded and coordinated with other efforts focused on aquatic communities.

## Communication and Information Transfer

- Updates of this handbook will be needed to include newly discovered information about conservation design, ecosystem and landscape-scale management, habitat management, critical life history information, and climate change impacts.

## Other needs

- The WISCLAND landcover dataset should be updated.
- Efforts to develop a statewide soils map from the State Soils Geographic (STATSGO) dataset should be supported.